International Journal of Surgery 9 (2011) 355–356

Contents lists available at ScienceDirect

International Journal of Surgery

journal homepage: www.theijs.com

Discussion

Commentary on: 'Predictors of length of stay in patients having elective colorectal surgery within an enhanced recovery protocol' Int J Surg 2010; 8: 628-32.

Emily M. Boyle, Stewart R. Walsh*

Department of Surgery, Graduate Entry Medical School, University of Limerick, Limerick, Ireland

ARTICLE INFO

Article history:
Received 14 January 2011
Received in revised form
20 January 2011
Accepted 25 January 2011
Available online 3 February 2011

Length of stay is an important proxy for successful outcome following colorectal surgery. The Combined Gastroenterology Unit at Scarborough, UK was among the groups which pioneered the concept of Enhanced Recovery After Surgery (ERAS) protocols, to reduce length of stay. These protocols typically comprise various elements designed to reduce pain and ileus, though the precise elements often differ between institutions. It is difficult to determine whether the success of these protocols rests upon the sum of the whole protocol, or just some individual components. Cost-effectiveness may be improved if the protocols can be limited to key interventions. The Scarborough group set out to identify which factors within the Scarborough protocol had the most impact. They undertook a retrospective analysis of patients who underwent open colorectal surgery and were managed according to their local protocol.[1]

Epidural analgesia (EA) and avoidance of oral opiates independently correlated with length of stay. All patients in whom EA was successful/feasible (93%) received it. Intra-venous morphine was prescribed for the remaining patients. Shorter EA duration also predicted reduced stay but the withdrawal criteria were unclear. The meta-analysis quoted by the authors only showed a length of stay benefit with EA when used in combination with an ERAS programme, and specifically no difference when compared to opioid analgesia.[2] Other evidence has questioned even this benefit.[3] The Scarborough analysis suggests that avoidance of oral opiates is important, but one cannot tease out the relationship between opiate use and failure of epidural placement within their cohort. Presumably, patients whose epidural failed required more opiates. These data should not be used to withhold adequate analgesia from patients whose epidurals fail or are contraindicated.

The ASA grade distribution suggests that the Scarborough cohort is fitter than the typical colorectal population, which may limit generalised application of the study findings (80% of patients were ASA 1 or 2). UK NBOCAP figures for 2006–2008 for patients undergoing oncological colorectal resection show only 46.7% of patients were ASA 2 or higher, although ASA was not recorded in 30%.[4] Patients with existing co-morbidities are more carefully selected and routinely optimised before elective surgery, and longer durations of stay are anticipated in this cohort. ERAS protocols may be more beneficial in those with higher ASA grades, and it may be useful to emphasise this to patients pre-operatively to optimise recovery.

There is some equipoise in the literature regarding the importance of incision type. A Cochrane review suggested a benefit with transverse incision,[5] although a recent RCT has not supported this.[6] The study found a significant effect for transverse incision on univariate analysis, and the lack of significance in the multivariate model may well be a type 1 error. However the criteria for incision choice are unclear. Transverse incisions were used "whenever possible" and yet only 50% of the patients had them. This makes it difficult to draw a definite conclusion, as does the fact that laparoscopic surgery is now regarded as the standard of care for colorectal resection when available. In the era of minimally invasive surgery, incision direction may be less relevant.

The authors rightly point out that fitness-for-discharge may be a more accurate method of assessing postoperative recovery. It is less influenced by social and other external factors than length of stay. However it is not standardised, lacks objectivity and

DOI of original article: 10.1016/j.ijsu.2010.07.294.
* Corresponding author. Department of Surgery, Graduate Entry Medical School, University of Limerick, Room IW-220, Limerick, Ireland.
E-mail address: stewart.walsh@ul.ie (S.R. Walsh).

1743-9191/$ – see front matter
doi:10.1016/j.ijsu.2011.01.011

ultimately is a less relevant outcome than actual length of stay. Patients in this study were classified as short or long lengths of stay if they stayed for less or more than the cohort median of 6 days, meaning that a difference of even one day was enough to classify patients into different groups. Given the multitude of factors that can affect this figure this may be a slightly artificial way of analysing the data and may weaken the analysis.

In summary this is a topical and relevant paper that strengthens the case for the inclusion of certain modalities in an ERAS but has not clearly demonstrated an independent benefit of these factors. As these factors work in tandem, demonstrating individual benefits may be difficult, and given the acceptance of ERAS protocols, may be irrelevant. For now, the whole of ERAS remains greater than the sum of the parts.

Ethical approval

None.

Sources of funding

None.

Conflicts of interest

None.

References

1. Ahmed J, Lim M, Khan S, McNaught C, MacFie J. Predictors of length of stay in patients having elective colorectal surgery within an enhanced recovery protocol. *Int J Surg* 2010;**8**:628–32.
2. Marret E, Remy C, Bonnet F, Postoperative Pain Forum Group. Meta-analysis of epidural analgesia versus parenteral opioid analgesia after colorectal surgery. *Br J Surg* 2007;**94**:665–73.
3. Zutshi M, Delaney CP, Senagore AJ, Mekhail N, Lewis B, Connor JT, et al. Randomized controlled trial comparing the controlled rehabilitation with early ambulation and diet pathway *versus* the controlled rehabilitation with early ambulation and diet with preemptive epidural anesthesia/analgesia after laparotomy and intestinal resection. *Am J Surg* 2005;**189**:268–72.
4. National Bowel Cancer Audit Programme. *NBOCAP Report 2009*. London, UK: National Clinical Audit Support Programme, NHS Information Centre; 2009.
5. Brown SR, Goodfellow PB. Transverse verses midline incisions for abdominal surgery. *Cochrane Database Syst Rev* 2005;(4): CD005199. doi:10.1002/14651858.
6. Seiler CM, Deckert A, Diener MK, Knaebel HP, Weigand MA, Victor N, et al. Midline versus transverse incision in major abdominal surgery: a randomized, double-blind equivalence trial. (POVATI). *Ann Surg* 2009;**249**:913–20.